# Growth Under the Gun:

## An Empirical Examination of the Impact of Small Arms and Light Weapons Transfers to Central America and Mexico on Economic Development, 1995-2011.

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Abstract:

This paper examines the impact of small arms and light weapons (SALW) transfers on the economic development of Central America in the years following the armed conflicts of the 1980s and 90s. While a great deal of attention has been paid to armed violence in general, the economic effects SALW transfers to developing countries have not been sufficiently deciphered. Specific details of the effects of SALW transfers on economic development need to be clearly understood if poverty alleviation goals, such as the Millennium Development Goals, are to be met by 2015. This paper conducts regression analyses on the imports of SALW and selected economic indicators in Central America from 1995-2011 using data from the World Bank and U.N. Comtrade to attempt to illuminate these details. Despite the well-known fact that SALW are destructive to economic development, results herein are inconclusive.

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## Introduction: The Problem of Small Arms

Small arms & light weapons—hereby referred to as "SALW" or "small arms"—are the primary ingredient in a wide range of violent acts committed across the globe including uprisings of paramilitary groups, human rights violations committed by nefarious regimes, and acts of terrorism. The proliferation and misuse of SALW jeopardizes security, impedes economic growth, and undermines fragile states. SALW have been the primary weapon used in 90% of conflicts in the world since 1990 (Bourne, Arming Conflict: The Proliferation of Small Arms 2007, 3). There are a multitude of factors that contribute to their demand including low price, availability, simplicity, durability, and most importantly, efficacy. They are also very difficult for law enforcement officials to track, as the line between legal and illegal weapons is often elusive. These factors, among others, contribute to make SALW responsible for 500,000 fatalities per year across the globe—the most of any weapon category—of which 200,000 are made up by homicides outside of conflict zones (Hogendoorn and Stohl 2010). According to former U.N. Secretary General Kofi Annan, "In terms of the carnage they cause, small arms, indeed, could well be described as weapons of mass destruction" (Annan 2000, 52).

Despite the catastrophes caused by weapons of mass destruction (WMD), small arms deserve as much attention, if not more. At present there are roughly 875 million small arms in the world according to the Small Arms Survey—a figure on the rise in recent years—of which somewhere between two-thirds and three-fourths are in the hands of civilians. The

> Small arms and light weapons include hand guns, rifles and carbines, assault rifles, machine guns, grenade launchers, portable anti-aircraft guns, portable anti-tank guns, MANPADS, and mortars of calibers less than 100mm.

growing number of SALW in the world is reflected in global trade. In 2012 the Small Arms survey estimated the annual trade in authorized small arms to be around $8.5 billion. When the illicit market is accounted for, the number easily extends past $10 billion. This number has increased drastically in recent years. As recent as 2006, the Small Arms survey estimated the figures for the licit and illicit market to be $1.5 billion and $4 billion respectively (Hogendoorn and Stohl 2010). Scholars and policymakers alike should be concerned with this rapid increase in the flow of SALW and what it means for developing countries.

Whether they're imported legally or illegally, small arms are especially detrimental to developing countries. Roughly 90% of armed conflicts between the early 90s to the early 2000s occurred in developing nations (Small Arms Survey 2003). Reasons abound for this condition. Developing nations typically have less stable governments, greater income inequality, and more resource-constrained law enforcement; all factors that increase the likelihood of conflict, making developing nations more prone to armed conflict. Given that 90% of armed conflicts since 1990 have been carried out with SALW, and that 90% of armed conflicts over the same time period occurred in developing nations, it is safe to conclude that the vast majority of global armed-conflicts over the past two decades have been in developing nations where SALW were the primary weapon. This relationship has caused analysts at the World Bank, the UN, and scholars in International Relations and Economic Development to conclude that SALW proliferation is a major problem hindering the developing world from sustainable economic growth.

Although not the focus of this paper, it is worth noting the benefits small arms can provide developing nations. Many studies indicate the positive effects small arms imports have on economic growth by providing technical skills, educational training, creating infrastructure necessary to economic development, and increasing productivity through technical advancement.

Empirical evidence for these arguments has been provided by Beniot (1978), Ward, et al. (1991), Alexander (1995), Chletsos and Kollias (1995), Sezgin (2000), Nikolaidu (2001), and Yilidirim, Sezgin and Ocal (2005), among others. Additionally, small arms imports can help unstable governments fight off violent insurgents as imports are more cost-effective than the domestic production of these weapons for many nations. While these positive effects are legitimate, policymakers are becoming increasingly aware of the negative impacts of small arms transfers on economic development. One of the earliest actions that signified this realization was the adoption of a Code of Conduct for Arms Exports by the European Union (EU) in 1998. This policy requires EU member nations to assess "the compatibility of an arms export with the technical and economic capacity of the recipient country, taking into account the desirability that states should achieve their legitimate needs of security and defence with the least diversion for armaments of human and economic resources." (European Union Council 1998, 7).

Many researchers have determined the negative effects armed violence causes on economic development (Buchanan and Muggah n.d.; Godnick, Muggah, and Waszink 2002; Hogendoorn and Stohl 2010; Muggah and Batchelor 2002; Serrano-Berthet and Lopez 2011). However, insufficient research has been undertaken on the specific role arms transfers play in this process (Bourne, Chalmers, et al. 2004; Brauer and Dunne 2004). By undertaking a quantitative analysis of the SALW trade to Central America from 1995-2011 this paper attempts to answer two questions: 1.) To what degree is the trade of these weapons responsible for impeding economic development? 2.) How are those effects changed when SALW are transported to countries that already have a surplus of those weapons and a history of conflict,

such as Central America? Central America[1] (see Figure 1 for a map of the region) is an ideal region to examine this question, not only because of its history of armed conflict, but also because each of the eight countries in this study shares similar geographic characteristics due to their proximity to one another. This feature is an added benefit for empirical analysis as it allows many similarities to be held constant across the region, leading to more robust results.

All of the Central American countries are considered to be developing according to the World Bank. Except for Costa Rica and Panama, all are considered to be lower-middle income countries; Costa Rica and Panama are considered upper-middle. Despite the fact that Mexico is significantly wealthier than its Central American neighbors, it is still categorized as a developing nation by the World Bank.

Understanding how transfers of small arms impact economic development is imperative for policymakers in major small arms exporting countries to understand if looming initiatives, such as the U.N.'s Millennium Development Goals to reduce world poverty by 2015, are to be accomplished. This knowledge also has benefits for security policy. The civil wars that plagued Central America in the 1980s may have ended, but many of the weapons remained in the region long afterwards allowing for armed violence to become prevalent. This overflow of weapons has led to the weakening of many societal institutions and transformed the region into a breeding ground for international drug cartels, which are becoming a threat to American security.

**Figure 1: Map of Central America and Mexico**

[1] Central America typically refers to the countries of Belize, Guatemala, Panama, Honduras, El Salvador, Costa Rica, and Nicaragua. Mexico will also be included in this analysis because it shares many conditions of Central American countries such as insecurity and inequality. Also, the Mexican drug war has many implications for the security and economic growth of Central America.


Source: Kellogg Institute for International Studies

This study is comprised of six sections. It begins with a brief overview of the current inventory of small arms in Central America, and how they contribute to the area's growing homicide rate, as well as an overview of the current trade dynamics of SALW to Central America in order to provide context for the rest of the paper. Section two reviews literature that assesses the various negative impacts of small arms and light weapons on economic development in Central America and other developing nations. Section three provides a framework that illustrates the various ways SALW imports may negatively affect economic development. In section four, information and methodology about the data is discussed. Section five reveals inconclusive regression results from a series of regressions on arms imports and a select few economic variables. Lastly, section six concludes by hypothesizing reasons for the inconclusive results and offering advice to future similar studies.

## Section 1: Small Arms in Central America—A History of Violence

### 1.1: Overview of SALW in the Region

Central America is experiencing a crisis of small arms. In addition to the destructive conflicts of the 1980s, which included lengthy civil wars in Nicaragua (1979-1990), El Salvador (1980-1992), and Guatemala (1960-1996), economic hardships such as poverty, unemployment, and inequality make Central America even more vulnerable for armed violence. Although these conflicts ceased decades ago, and there are currently no insurgencies active in the region, violence remains the norm because of elongated government wars against drug cartels and other organized gangs—most notably the Mexican Drug War. In fact, some security analysts argue the current situation is more detrimental to regional security than the civil wars of the 1980s (Dudley 2010). Security threats are not the only problem—economic growth is being hindered as well. The IMF recently estimated that the armed violence in Central America[2] amounts to a loss of 7.5% a year in GDP on average (Serrano-Berthet and Lopez 2011).

Many of the small arms that flood the region today are the same weapons that were imported to the region to furnish the aforementioned conflicts in El Salvador, Guatemala, and Nicaragua. In some cases, the United States and its allies supplied arms to both the state and the insurgent groups, which in large part led to the current overflow of small arms in the region. These weapons, primarily assault rifles, are durable goods that remain in useable condition. Furthermore, the assault rifle has not undergone significant technology upgrades since the cold war, leaving these old weapons nearly as effective as new weapons. Even though thousands of weapons were collected at the termination of the civil wars (360,000 at the end of the El Salvadorian civil war, 1,824 in Guatemala, and 17,000 in Nicaragua), scholars estimate the sum

[2] Due to data unavailability, this figure does not include Belize, México, or Panama.

of unaccounted weapons in the region today could exceed one million (United Nations Office on Drugs and Crime 2012).

The majority of hand guns circulating in the region today were purchased legally from the United States (United Nations Office on Drugs and Crime 2012). However, many of these weapons that are imported legally are re-routed to illicit markets with the help of legitimate arms dealers who serve as fronts for criminal organizations. In addition, there are many handguns smuggled to the region illicitly that go undetected due to lack of security. Table 1 provides a brief overview of the magnitude of firearms currently circulating in the region, as well as the varying degrees of gun rights within each country. Compared to the rest of the world, the region can be characterized by high gun ownership and restrictive gun laws. This combination does not appear to be increasing safety or development throughout the region. Honduras is the perfect example, as they have the strictest gun laws in the region and the highest homicide rates in the world.

**Table 1: Firearms in Central America**

| Country | World Rank on firearm ownership | Average firearm per 100,000 | Estimated total firearms | Gun rights index (> numbers mean more restrictions) |
|---|---|---|---|---|
| Belize | 62 | 10 | 29,000 | 4.2 |
| Costa Rica | 64 | 9.9 | 430,000 | 3.6 |
| El Salvador | 92 | 5.8 | 400,000 | 3.3 |
| Guatemala | 49 | 13.1 | 1,650,000 | 4.8 |
| Honduras | 88 | 6.2 | 500,000 | 3 |
| Mexico | 42 | 15 | 15,500,000 | 3.9 |
| Nicaragua | 77 | 7.7 | 395,000 | 4.8 |
| Panama | 26 | 21.7 | 700,000 | 4.97 |

Sources: firearm data (1st 3 columns) comes from UNODC (2011). Gun Rights Index obtained from FreeExistence.org (2009).

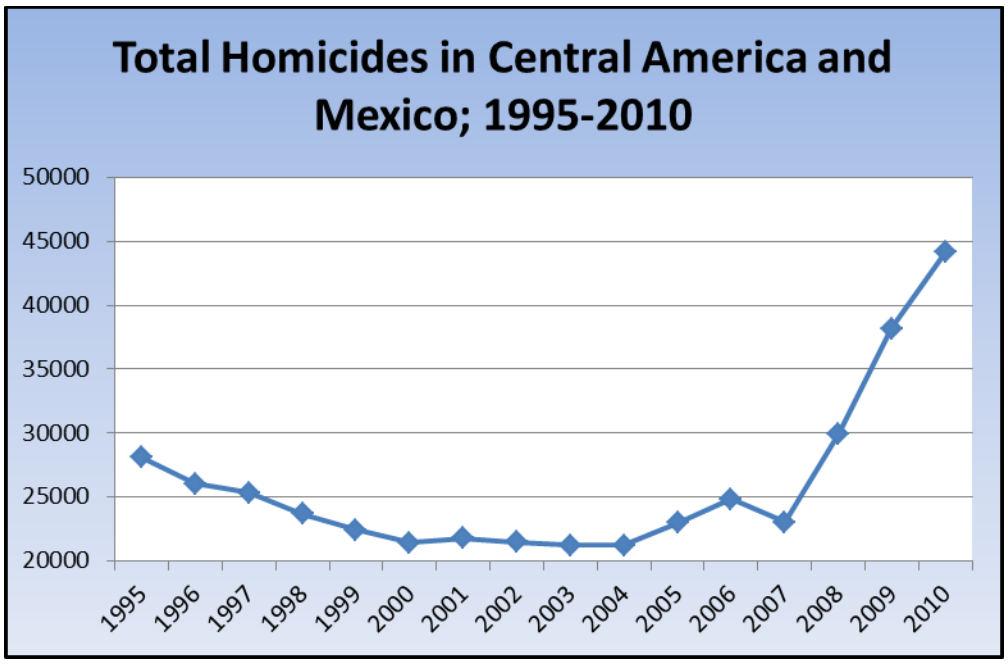
The majority of the armed violence in the region today is carried out by drug trafficking organizations (DTOs). Mexico was the first country in the region to face a significant security

threat from DTOs. To help combat the problem, the Mexican government initiated the "War on Drugs" in the 1990s. However, as a result of measures taken by the Mexican government to combat the problem, DTOs in Mexico began shifting pieces of their operations to Central America where legal institutions are weaker and police forces are more resource-constrained; a similar effect occurred for DTOs in Colombia after the Colombian government's crackdown. This has resulted in increases in both violence and corruption of government officials in the region (Meyer and Seelke 2012). Not only are these gangs involved in narcotics trafficking, but many are broadening their operations to include extortion and kidnapping. The effects are deteriorating regional security, and causing concern for the security of neighboring countries such as the United States.

There is little doubt that Central America's surplus in small arms is primarily responsible for the region's alarming homicide rate. Central America has the highest homicide rate for any region throughout the world with 41 homicides for every 100,000 people of the population. Southern Africa comes in a distant second with 30.5. In 2011, Honduras had the highest homicide rate of any country in the world (91.6), and El Salvador came in second (69.2). To put this in perspective, consider in 2010 there were 44,161 homicides in the region, including Mexico. In the same year, Bangladesh—whose population in 2010 was only slightly greater than Central America and Mexico combined—had only around 4,000 homicides. Graph 1 shows annual homicides in Central America and Mexico from 1995-2010. Homicides fell from 1995-2004 before rising moderately until 2007 when they began to increase drastically. The declining trend that emerged after 1995 is surprising when considering the recent end of the civil wars in the region. Something worth noting not depicted in the graph below is the discrepancy between homicide rates in northern and southern Central America. The northern part of the region, which

includes Belize, Guatemala, Honduras, and El Salvador, constitutes that vast majority of homicides across the region (an average of 57.32 in 2010). Homicide rates in the southern countries remain consistently low (an average of 15.5 in 2010). However, due to increasing violence in the southern region there is growing concern that these countries could soon become havens for the DTOs that plague the north (World Bank 2011). Research typically shows that homicide rates remain high after conflict, making the declining trend beginning in 1995 a pleasant surprise. However the recent spike in homicides in 2007 should be of great concern to the region.

**Graph 1**




Source: United Nations Office on Drugs and Crime (UNODC)

Despite the clear relationship between small arms and violence, the debate continues about whether greater access to small arms in itself leads to an increase of violence. Some scholars contend that it is no-brainer that increases of small arms will lead to more violence, while others argue that increases of some small arms indicate a society where citizens have better

means of self-defense. However it has been shown that increases in firearms intensifies violence and leads to increases the case-fatality rate in assaults (Cook and Ludwig 2006). It has also been shown that armed criminality is particularly violent in post-conflict countries due to availability of weapons and high unemployment rates for youths (Hogendoorn and Stohl 2010). This is exactly what happened in El Salvador after civil war in that country ended 1992. In 1990, roughly 55% of homicides in El Salvador were carried out with firearms, however by 1995 that number jumped to 75% (Godnick, Muggah and Waszink 2002). Table 2 shows this problem persistent in El Salvador up until 2008. Upon examining Table 2, it is clear that firearms have played an increasing role in homicides for all of Central America since 2005. The most noticeable results are in Mexico, where the percentage has nearly doubled during the last half decade as the war on drugs continues. By comparison, homicides committed with firearms in the United States have ranged between 65%-69% over 2005-2010.

**Table 2: Percent of Firearm Related Homicides in Central America and Mexico, 2005-2010**[3]

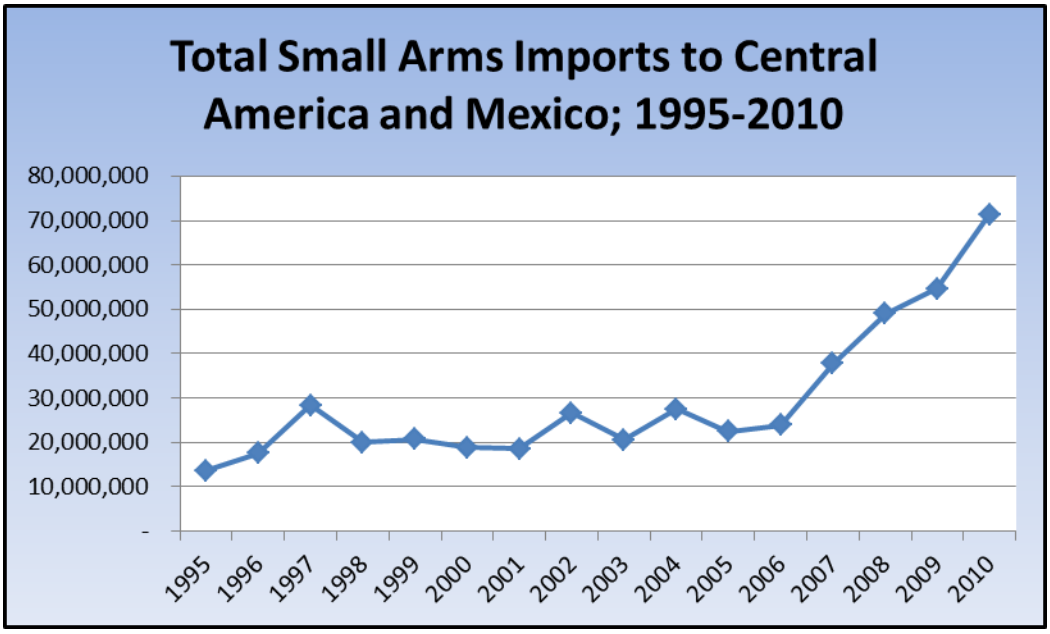
| Country | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| Belize | 50.6% | 40.2% | 42.3% | 64.1% | 48.5% | 52.3% |
| Costa Rica | 58.5% | 57.3% | N/A | N/A | N/A | N/A |
| El Salvador | 77.0% | 78.2% | N/A | 76.9% | N/A | N/A |
| Guatemala | 79.4% | 78.3% | 82.6% | 83.2% | 83.2% | 84.0% |
| Honduras | 76.0% | 78.2% | 75.0% | 80.3% | 81.4% | 83.4% |
| Mexico | 28.5% | 30.7% | 39.4% | 38.6% | 54.6% | 54.9% |
| Nicaragua | N/A | N/A | N/A | 35.2% | 42.1% | N/A |
| Panama | 57.1% | 68.7% | 65.1% | 79.4% | 81.5% | 75.0% |
| Average | 61.0% | 61.7% | 60.9% | 58.2% | 65.2% | 69.9% |

Source: United Nations Office on Drugs and Crime (UNODC)

[3] This chart only goes back to 2005 because prior periods in Central America were very scarce in reporting this data.

The drastic increase of the homicides in Central America over the last five years shown earlier in Graph 1 is in line with trends in imports of small arms to the region over the same time period. Graph 2 shows the total amount of small arms imported to Central America and Mexico from 1995-2011. The similarities between Graphs 1 and 2 suggest a very strong relationship between SALW imports and homicides.

**Graph 2**



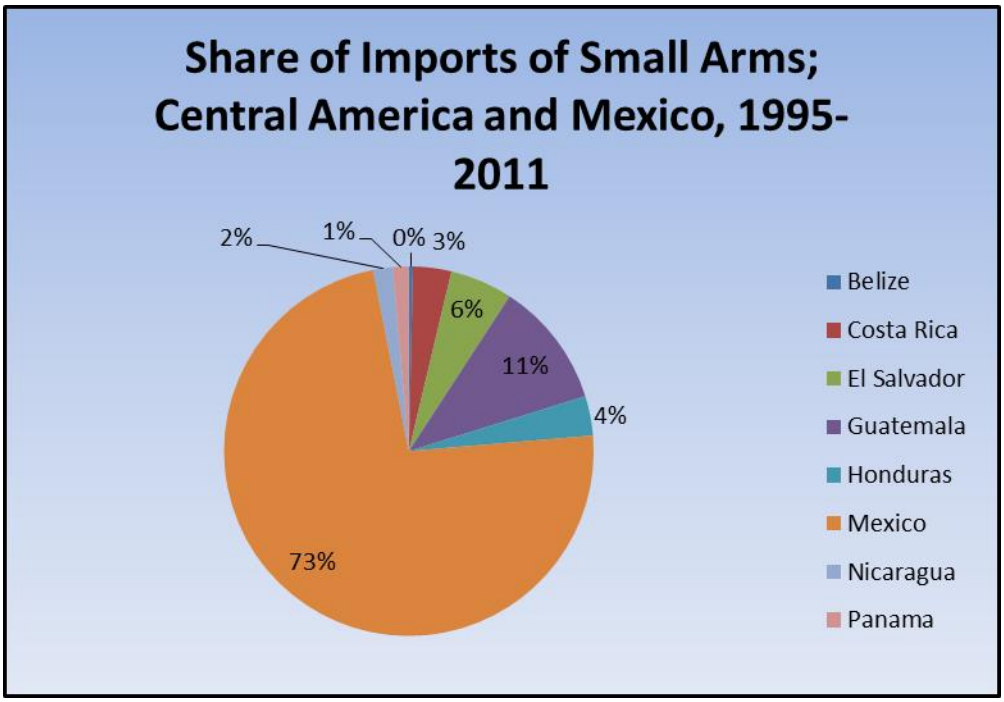

Source: U.N. Comtrade. All data in current U.S. dollars.

## 1.2 Overview of Current SALW Trade to the Region

The Small Arms Survey categorizes nations as "major importers" of SALW if their annual SALW imports exceed $100 million (U.S. Dollars). By this standard, the nations of Central America are nowhere near being a major importer of SALW; even when the region's figures are aggregated, as in Graph 2, they are still far short of this threshold. Graph 3 shows the

country by country breakdown of total imports to the region from 1995-2011, and Graph 4 shows a per capita breakdown of the same data.

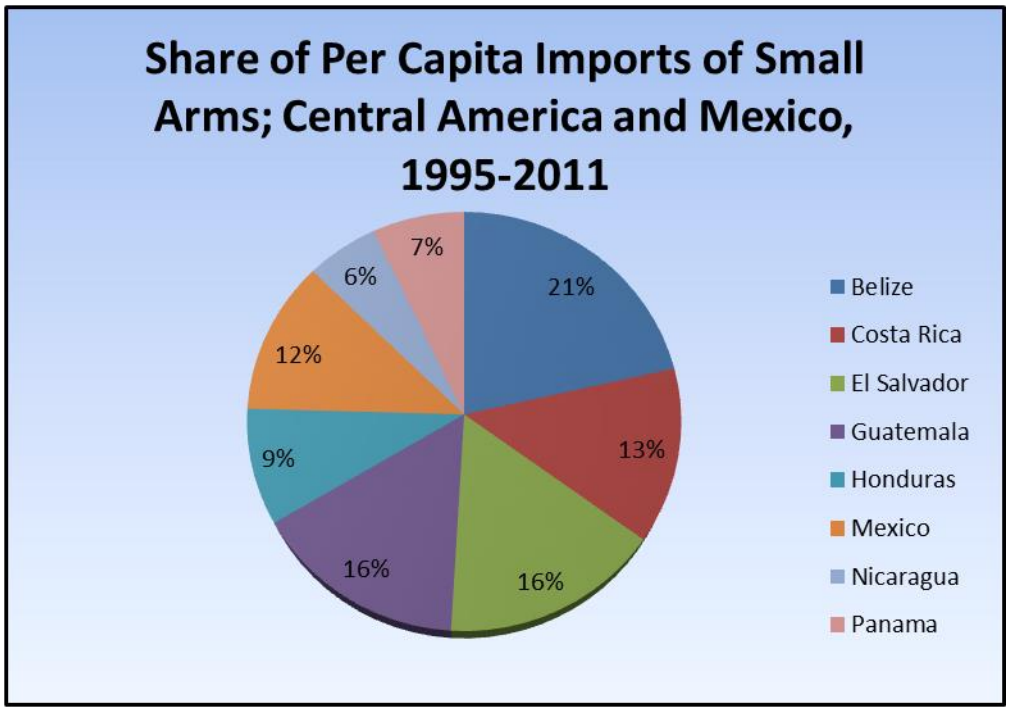
**Graph 3**




Source: U.N. Comtrade

Not surprisingly, Graph 3 reveals that Mexico, by far the wealthiest nation in the region, is the primary importer of SALW to the region. In addition to its surplus in wealth over the other countries, Mexico is facing a high demand for SALW because of the "war" the government has waged on criminal gangs and narcotics traffickers. However, Graph 4 shows a breakdown of the per capita imports. In this case, Belize is the primary importer while Mexico is fourth.

**Graph 4**




Source: U.N. Comtrade

The suppliers of small arms to Central America are very diverse. For example, roughly a dozen different countries were responsible for small arms imports in Nicaragua in 2009, despite that Nicaragua's imports of SALW totaled less than 1 Million USD for that year. The United States is the prominent supplier of SALW to the region in terms of value; although Germany, France, and Turkey rival the U.S. in terms of frequency. Mexico is the only country in Central America with significant involvement in the SALW trade. In 2009, the value of their imports of SLAW was roughly USD 40 million.[4] In the other countries throughout the region, SALW imports do not exceed even USD 4 million, and in some cases are less than USD 1 million (Belize, Nicaragua, Panama). Despite that SALW imports are not considered high in the region, they have been drastically increasing over the last five years (see Graph 2). The region is also

[4] These data are from a different database than the Small Arms Survey. It's from the data used in my regressions and does not include cartridges and ammunition of SALW such as pistols, revolvers, and machine guns. It also does not include shotguns, rifles, their parts, accessories, and ammunition. However, even if these categories were factored it would not significantly alter the dynamic of the comparisons made here.

awash with small arms from the civil wars of the 1980's. Furthermore, despite that the other Central American countries pale in comparison in SALW imports to the U.S. and the European Union, firearms play a much larger role in criminal activities such as homicides, robberies, and kidnappings in Central America.

## Section 2: Literature Review

Godnick, Muggah, and Waszink (2002) review the impact of small arms in Central America in the years following armed conflicts in El Salvador, Guatemala, and Nicaragua that plagued the region in the 1980s. As a result of these conflicts, and others, the region remains awash in small arms to this day. Many of these weapons have flowed from conflict zones to previously peaceful countries of Costa Rica, Honduras, Mexico, and Panama where they are primarily used in the narcotics trade and by youth gangs to commit crimes. As a result, the region began to experience high homicide rates. Other consequences are increases in armed robberies, kidnapping, and children killed by stray bullets.

Small arms create enormous security and development hurdles for the countries they plague (Hogendoorn and Stohl 2010). Stohl and Hogendoorn from the Center for American Progress examine the direct and indirect effects of small arms on economic development. Even decades after civil wars in El Salvador and Guatemala, the availability of small arms is tied to alarmingly high homicide rates. In 1999 alone, this violence cost Guatemala roughly $565 million dollars compared to a $575 million dollar loss of GDP as a result of the 1981-85 civil war. Other indirect effects of small arms include the erosion of social services, a decline in formal economic activities and a rise in illegal activity, the distortion of savings, investment, and

revenue collection. They also find that Small arms and light weapons are not only a problem for the poorer countries of the region. Mexico is an example of how small arms availability can be troublesome for a medium income country. The small arms spread in Mexico has increased homicides, undermined local authorities, and created security concerns for many citizens.

It is important to realize the negative economic consequences of SALW are widespread and can be measured with a multitude of factors. The Small Arms Survey's *Unfinished Business* (2006) shows skyrocketing health costs and productivity losses are serious consequences of small arms violence. Researchers found that the average medical cost of a single gunshot wound to be around $4,500 in Rio de Janeiro, Brazil—nearly three times as much as a stab wound in the same city. The researchers then extrapolated the costs in Rio de Janeiro to the entire country of Brazil and estimated a total cost of $90 million in direct health costs for 1999. They applied the same method to Bogota, and estimated total health costs in Colombia as a result of small arms to be roughly $40 million. Furthermore, their studies calculated productivity losses of approximately $10 and $4 million in Brazil and Colombia respectively.

Research on the exact ways which arms transfers affect economic development and poverty is scant, but scholars (Bourne, Chalmers, et al. 2004) of the Armed Violence and Poverty Initiative (AVPI) at Bradford University attempt to shed light on this subject. They advocate that arms exporters use "balance sheets" which show the particular impact on poverty of a particular transfer of arms. These balance sheets balance out the benefits of arms transfers such as increased security and stimulated growth, with potentially negative consequences such as crowding out effects, possible exacerbation of inter-state and intra-state conflict, and increasing corruption. They find that the impact of arms imports on inter-state and intra-state conflict varies considerably, while the impact on resource diversion and corruption are almost always negative.

Their final conclusion is that a full assessment of the net impact of arms transfers on development and poverty requires a thorough understanding of the use and cost of the arms in question, which can only be determined on a case by case basis.

Jurgen Brauer and J. Paul Dunne have done significant research on offset agreements, which obligate the arms seller to reinvest (offset) arms sales proceeds in the purchasing country (Brauer and Dunne 2004). Offsets occur because countries that import defense supplies look to reduce the cost as much as possible in order to lead to economic growth and in turn gain public support of the arms deal. In a sense, it is an attempt for emerging economies to have the best of both worlds—a strong national defense and robust domestic industries. However, to date there has been little research done on how well offsets spawn economic growth. Brauer and Dunne find no evidence that offsets reduce the cost of arms acquisitions, nor lead to substantial or sustained job creation. Additionally, they fail to find that offset agreements lead to successful technology transfer to the civilian sector, and only little technology transfer to the military sector; often over decades and at high cost. Furthermore, any technology that is transferred is dramatically outpaced by continuous technology advancements in developing countries.

## Section 3: Frameworks for Studying SALW Imports and Development

The destructive consequences of small arms and light weapons have long been studied by scholars in international development, yet frameworks to understand the particular ways the SALW trade affects developing countries remain scant. Criterion 8 of the aforementioned European Union Code of Conduct for Arms Exports mentions that member nations should take into account “the desirability that [recipient] states should achieve their legitimate needs of

security and defence with the *least diversion* for armaments of human and economic resources." This focus on the opportunity cost associated with military expenditures incurred by developing nations was the focus of much early research on the impact of arms imports on developing nations (Brauer and Dunne 2004; Haines, RJ 2004; Markowski and Hall, P 2004; Martin, S 1996; Perlo-Freeman 20004; Taylor 2004).

However, the economic impact of SALW imports extends beyond mere resource diversion and opportunity costs. Bourne, Chalmers, et al. (2004) argue that SALW imports can additionally hinder economic development by leading to increases in inter-state conflict, intra-state conflict, and government corruption. Increases in inter-state and intra-state conflict can indirectly lead to stunted economic growth by weakening security, injuring and displacing workers, and increasing health costs; even though there are some cases where SALW transfers benefit developing countries by allowing weak governments to defend themselves from insurgencies and aggressive neighboring nations. Additionally, the trade in small arms can have significant impacts for corruption in countries importing these weapons. Corruption in the arms trade leads to negative effects on economic growth by increasing recipient costs and undermining links between arms supplies and legitimate security requirements. Furthermore, the "benefits" of corruption in the arms trade tend to be used towards criminal means, instead of for the good of the entire economy Bourne, Chalmers, et al. (2004).

The findings of Bourne, Chalmers, et al. (2004) were seminal in the study of how arms imports impede economic development in the developing world. In order to analyze how the SALW trade is affecting the economic development of Central America, this paper uses their framework and applies it to the region. There are a couple contributions this paper hopes to make by using this process. First, Bourne, Chalmers, et al. (2004) do not use regression analysis in

their study. By applying a regression analysis to the Bourne, Chalmers, et al. (2004) framework, this paper attempts to measure their results empirically to see if they hold for Central America. Additionally, by conducting this analysis on Central America for the years 1995-2011, this paper seeks to determine whether or not small arms transfers to developing nations already awash in small arms, such as Central America, have the same detrimental effect as they do in developing nations without such a significant history of small arms violence. Shining light on this question will help determine to what degree new weapons are causing harm in the region, or if the damage is being done primarily by weapons already circulating throughout the region. This knowledge will help policymakers decide whether or not they need to handle the problem of SALW proliferation with stockpile reduction tactics, or policies designed to staunch the trade of SALW to developing nations.

In addition to the methods presented by (Bourne, Chalmers, et al. 2004), this paper adds two additional methods to study the impact of SALW imports on economic development. GDP growth is studied alongside arms imports, as is tourism expenditures. Using the data covered in the next section, regressions will be run with the following dependent variables: government stability, corruption, GDP growth, and tourism expenditures. Arms imports per capita (lagged one year) is the primary control variable in all of the equations. Sections 4 and 5 discuss the data and detail the results respectively.

## Section 4: Methodology and Data

### 4.1: Models and Hypotheses

The following four models are used to measure stability, corruption, GDP growth, and tourism expenditures, against the imports of small arms in Central America and Mexico from 1995-2011.

***Model 1:*** $Stability = \beta + \beta Imports\_percapita + \beta Armed\_forces + \beta Agriculture + \beta Corrupt + \beta Energy + \beta GDP\_grow + \beta Industry + \beta Intent\_homicides + \beta Life\_expect + \beta Rule\_of\_law + \beta Tour\_expend + \beta Unemployment + \beta Voice\_and\_accountability + \beta Year + \beta Belize + \beta Costa\_rica + \beta El\_salvador + \beta Guatemala + \beta Honduras + \beta Nicaragua + \beta Panama + \mu$

**H1:** I expect Imports per capita to be negatively correlated with stability.

***Model 2:*** $Corruption = \beta + \beta Imports\_percapita + \beta Democracy + \beta Education + \beta Female\_parliament + \beta GDP\_grow + \beta Govt\_effective + \beta Industry + \beta Intent\_homicides + \beta Life\_expect + \beta Rule\_of\_law + \beta Stabiliy + \beta Unemployment + \beta Year + \beta Belize + \beta Costa\_rica + \beta El\_salvador + \beta Guatemala + \beta Honduras + \beta Nicaragua + \beta Panama + \mu$

**H2:** I expect Imports per capita to be negatively correlated with corruption.

***Model 3:*** $GDP\ Growth = \beta + \beta Imports\_percapita + \beta Agriculture + \beta Corrupt + \beta Education + \beta Energy + FDI + \beta Industry + \beta Intent\_homicides + \beta Life\_expect + \beta Population + \beta Rule\_of\_law + \beta Stabiliy + \beta Tour\_expend + \beta Unemployment + \beta Voice\_and\_accountability + \beta Year + \beta Belize + \beta Costa\_rica + \beta El\_salvador + \beta Guatemala + \beta Honduras + \beta Nicaragua + \beta Panama + \mu$

**H3:** I expect imports per capita to be negatively correlated with GDP growth.

***Model 4:*** $Tourism\ Expenditures = \beta + \beta Imports\_percapita + \beta Democracy + \beta Education + \beta Energy + \beta Industry + \beta Intent\_homicides + \beta Life\_expect + \beta Stabiliy + \beta Year + \beta Belize + \beta Costa\_rica + \beta El\_salvador + \beta Guatemala + \beta Honduras + \beta Nicaragua + \beta Panama + \mu$

**H4:** I expect imports per capita to be negatively correlated with tourism expenditures.

### 4.2: Empirical Methods

In order to examine the impact of small arms on conflict as Bourne, Chalmers, et al. (2004) did, I use the "Political Stability and Absence of Violence" indicator provided by the World Governance Indicators,[5] an initiative of the World Bank—hereby referred to as "Stability." The Stability variable measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means—including politically-motivated violence and terrorism. Due to restrictions in data availability, I am not able to examine inter-state and intra-state conflict separately as done in Bourne, Chalmers, et al. (2004); instead stability is used to measure both. Stability, as is every other WGI, is reported in two forms: the standard normal units of the governance indicator, ranging from around -2.5 to 2.5 (a higher number indicates a more stable government), and in percentile rank ranging from 0 (lowest stability) to 100 (highest stability). I use rank data in my regressions as I anticipate it to be more specific than percentile data, which is often rounded. Additionally, percentile figures base a country's performance in a selected indicator on the performance of other countries, which could easily distort the selected countries actual performance.

[5] The WGI are produced by Daniel Kaufmann, Brookings Institution; Aart Kraay, World Bank Development Research Group; and Massimo Mastruzzi, World Bank Institute.

A primary weakness of the Stability measure compiled by the WGI is its bluntness. It is a broad indicator in nature; compiled by roughly 30 different sources. Additionally, these measurements are only *perceptions* of citizens on the stability of their government; instead of exact measures of conflict. As a result of these weaknesses, other possible measures for conflict were considered. The Peace Research Institute Oslo (PRIO) conducts research on peace and conflict resolution. PRIO has collaborated with Uppsala Conflict Data Program (UCDP) at the Department of Peace and Conflict Research, Uppsala University, in the production of a dataset of armed conflicts, both internal and external, from 1946-present. This dataset is beneficial because it specifically accounts for conflict and delineates between internal and external conflict. In addition, there is the Armed Conflict Location and Event Dataset (ACLED), which is the most comprehensive public collection of political violence data for developing countries. To date ACLED has recorded over 60,000 events including battles, human rights abuses, riots, protests, and even non-violent activities such as rebel recruitment, arrests, or base establishment. However, a variable specifically measuring conflict would not be possible to use for the region as a whole, since conflict has only occurred in a handful of the countries. The Stability measure is preferred because it is measured annually for all of Central America and Mexico.

For Model 2 (Corruption), the WGI Control of Corruption indicator is used. Similar to Stability, the Control of Corruption indicator is also based on perceptions. Specifically, the perceptions of citizens on the degree of public power that is being used for private gain; including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Unlike data on conflict, which presented a difficult task to locate for this paper, this data on corruption from the WGI is almost certainly the best available data for the purposes of this paper.

Per capita arms imports (lagged one year) is used as the primary independent variable in all four models. The per capita form of imports is used as a way to standardize the imports data across the region. Without any standardization, the regional import figures would be almost entirely dominated by Mexico. Per capita normalization is favored over other methods such as percent of GDP as it is the aim of this paper to learn about the damage that can be done with small arms by one person, adding the personal element will hopefully draw more attention from policymakers to the issue of small arms. The data is also lagged one year because it is expected that arms imports to a country wouldn't have a tangible effect on economic growth until the following year. Additional regressions were ran for each model with other methods of measuring arms imports such as the aggregate value of arms imports (lagged one year), imports as a percentage of GDP (lagged one year), Imports growth as a percentage of GDP, and imports growth per capita. However, none of these different methods yielded statistically significant results.[6]

Bourne, Chalmers, et al. (2004) was consulted when preparing the full set of independent variables for the models on stability and corruption. Bourne, Chalmers, et al. (2004) specifically list GDP growth, democratic government, investment, infrastructure, and violence as factors leading to conflict. As a result, my model includes GDP growth, a democracy indicator; agriculture, energy, and industry (infrastructure); and intentional homicides as independent variables, among others. Additionally they claim laggard GDP growth also leads to corruption. Treisman (2007) was also consulted for factors that cause corrupt governments. Treisman (2007) cites the efficacy of a country's legal system, societal norms toward rule following, civic freedoms, government stability, GDP growth, and democratic governments as factors that lead to

[6] These will be made available by the author on request

a country being less corrupt. The WGI provide additional indicators that can be used to proxy for some of these factors. In my regressions, I use the Voice and Accountability indicator as well as the Female Parliament variable[7] to measure for civic freedoms such as freedom of speech, expression, association, press, and gender equality. The Rule of Law indicator is used to capture norms towards following the general rules of society. Lastly, the Government Effectiveness indicator is used as a proxy to indicate the strength of a society's legal system and other government institutions.

The insight of additional scholars was sought for the full set of independent variables for the models on GDP growth and tourism expenditures. Barro (1991) cites endogenous variables such as human capital, infrastructure, and investment as factors leading to economic growth. These findings are consistent with earlier models on endogenous growth such as Solow (1956), Cass (1965), and Koopmans (1965). In line with Barro (1991), my regressions include indicators on education and life expectancy (human capital); and indicators on agriculture, energy, and industry (to account for infrastructure). Complete data on investment proved difficult to find for Central America. Bourne, Chalmers, et al. (2004) also indicate factors such as violence, absence of corruption, political stability, and civic freedoms as contributing to economic growth—as such these variables are included in Model 3. A variable on Foreign Direct Investment (lagged one year) is also included as FDI has long been known to be positively correlated to the growth of developing countries (Chowdhury and Mavrotas 2006). The model on tourism expenditures was composed by assuming many of the same similarities to the model on GDP growth. Additionally, all models include country dummy variables. These variables are used to pick up differences between countries that cannot be otherwise accounted for. All of the models also include a

[7] This variable is taken from the World Bank's Databank and is a measure of the number of women in national parliament.

"Year" variable. This variable captures changes in the dependent variable that occur solely because of time trends.

The distinction between "arms" and" small arms" is an important one to be made for the sake of this paper. "Arms" in general includes all types of weapon categories from artillery weapons that require the use of several persons, to chemical, biological, and nuclear weapons. Contrarily, Small arms refer to weapons that can be used to their full effect by only one person. Data on small arms imports is used rather than arms imports because the aim of this project is to detect the damage that can be caused by just one person. Additionally, small arms are by far the most popular weapon used in conflicts in developing nation, whereas as Major Conventional Arms (MCAs) are virtually non-existent.

### 4.3: Full Data Review

Data on small arms imports are obtained from the UN Comtrade database. Comtrade contains detailed import and export data for a wide-ranging set of commodities. It is the largest accessible trade database with more than 1 billion records. The data range from 1962 to the most recent year, and is available for roughly 200 countries and areas. Data in Comtrade is updated continuously after it is standardized by the U.N. All values of yearly imports and exports are in current US dollars. In order to correct for this, A GDP Deflator from the IMF is used and applied to each year.

Data on arms and ammunition trade within Comtrade are available for 194 countries dating back to 1988. Comtrade includes sixteen different categories of SALW for a country; however for my imports data only four of these categories are used. These four are then aggregated, giving the final value of SALW imports for a given country and year. The four

categories are: Military weapons, other than hand guns, swords, etc; revolvers and pistols; parts and accessories of revolvers or pistols; and Parts and accessories nes of weapons, nes. These four categories are chosen because they best represent the types of SALW used in armed conflict today. The other twelve categories not included in my data set are composed of parts, ammunition, and weapons not used in conflict such as hunting rifles or flare guns.

Data on most other variables are obtained through the World Bank. Through their databank, the World Bank provides free and open access to a comprehensive set of time series data on economic, social, and political indicators for 246 countries, regions, and socioeconomic classifications across the globe. Most of the data used in this paper comes from the World Development Indicators and Global Development Finance subset within Databank. Data within the WDI and GDF subset are collected through official sources, although some adjustments are made to account for fiscal and calendar year discrepancies. In order to ensure data from developing countries are of the highest possible quality the World Bank uses the Data Quality Assessment Framework (DQAF), which was developed in collaboration with the IMF, to assess data quality by using best practices and internationally accepted concepts and definitions in statistics. DQAF facilitates a comprehensive view of data quality, one that recognizes interrelations, including tradeoffs, among elements of quality and allows emphases to vary across data categories and uses/users.

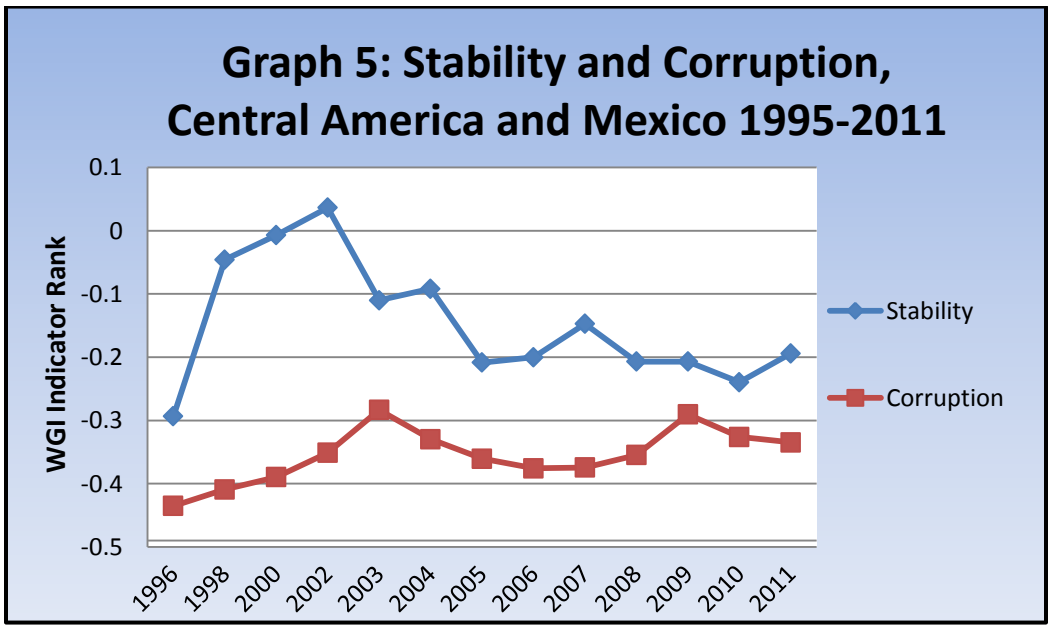
*The WGI's define governance as: "The traditions and institutions by which authority in country is exercised. This includes the process by which governments are selected, monitored, and replaced; the capacity of government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them."*

The World Governance Indicators (WGI) is also an initiative of the World Bank, but is a separate project. The WGI consist of six broad

indicators of the quality of governance for over 200 countries since 1996. The categories are: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. These indicators are compiled from several hundred variables obtained from 31 different data sources that capture perceptions of governance as reported by survey respondents, non-governmental organizations, commercial business information providers, and public sector organizations worldwide.

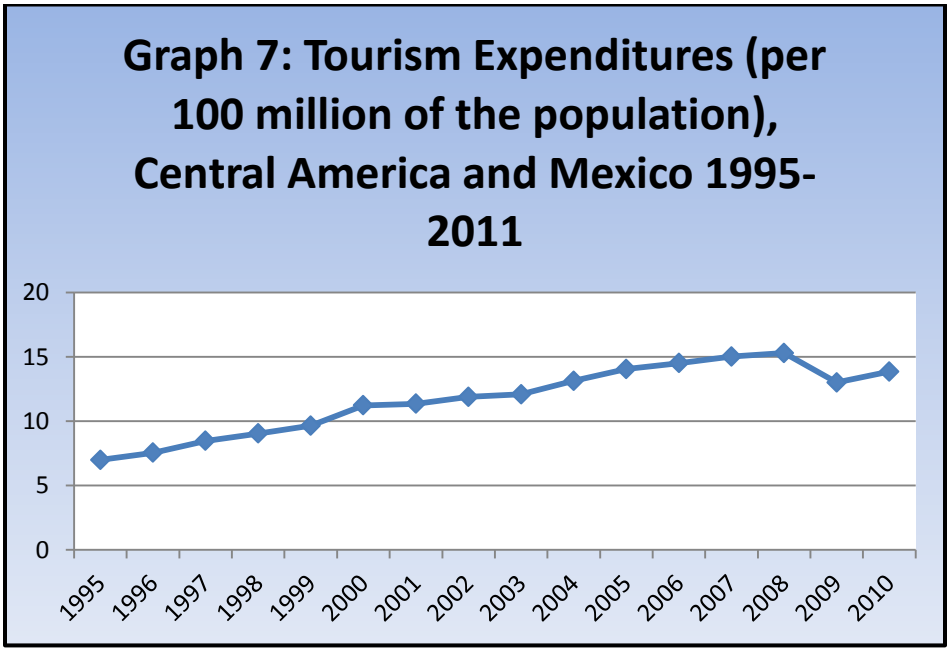
### 4.4 Descriptive Statistics

This section details the descriptive statistics of the dataset used in my models. Graphs 5, 6, and 7 show time trends for the dependent variables for each of the models from 1995-2011.[8] Graph 8 shows the time trend of arms imports per capita. The variation of the independent variable in Graph 8 is a good sign, assuming results are significant, as it means the results are robust this frequent variation. Conversely, the continuity of Graph 7 could mean less robust results.




[8] Graph 5 does not include 1997, '99, and '01 as the WGI were not reported for those years.


Graph 6: GDP Growth of Central America and Mexico, 1995-2011
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010


Graph 7: Tourism Expenditures (per 100 million of the population), Central America and Mexico 1995-2011
20
15
10
5
0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010

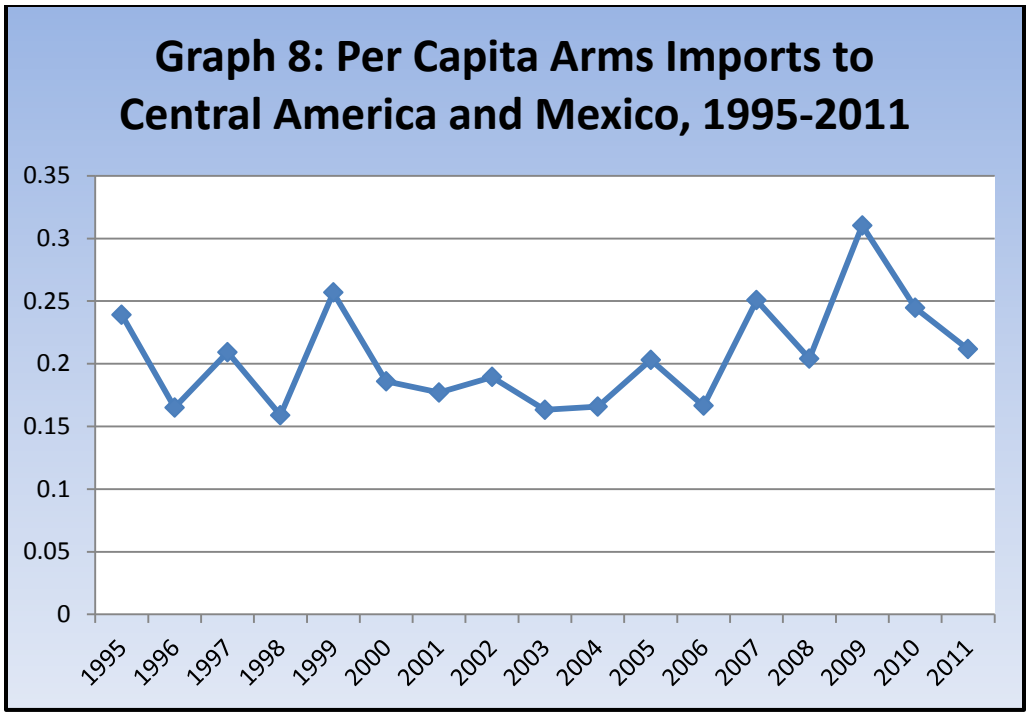



Table 3 shows the descriptive statistics for all variables used in my regressions. One interesting finding of the descriptive statistics is that the mean on the Stability and Corruption indicators is negative. This indicates that instability and corruption is more of a problem than not for Central America and Mexico over this time period. Other WGI that are negative are Rule of Law and Government Effectiveness (Govt Effective). Voice and Accountability is the only WGI registering a positive mean. This indicator is a measurement of the perceptions of voting rights, freedom of expression and association, and media rights. See Appendix 1 for a full elaboration on variable definitions and their sources.

**Table 3-Descriptive Statistics**

| Variable | Mean | Std. deviation | Min | Max |
|---|---|---|---|---|
| Agriculture | 12.626 | 6.781 | 3.462 | 40.508 |
| Armed forces | 0.919 | 0.339 | 0.446 | 1.914 |
| Corrupt | -0.354 | 0.425 | -1.033 | 0.783 |
| Education | 109.538 | 6.274 | 88.213 | 121.126 |
| Energy | 795.107 | 323.888 | 480.061 | 1636.928 |

| | | | | |
|---|---|---|---|---|
| Female Parliament | 15.252 | 8.807 | 0 | 36.6 |
| FDI (1 year) | 4.254 | 3.067 | -1.106 | 14.929 |
| GDP growth | 0.055 | 0.059 | -0.201 | 0.295 |
| Govt Effective | -0.248 | 0.405 | -0.96 | 0.383 |
| Imports per capita lag (1 year) | 0.201 | 0.159 | 0 | 1.013 |
| Intentional Homicides[9] | 29.089 | 25.08 | 5.304 | 139.132 |
| Industry | 3.842 | 5.151 | 3.842 | 24.803 |
| Life Expectancy | 72.828 | 3.257 | 64.986 | 79.315 |
| Population | 17680598 | 32918013 | 216500 | 1.15E+08 |
| Rule of Law | -0.466 | 0.494 | -1.188 | 0.66 |
| Stability | -0.147 | 0.478 | -1.083 | 0.989 |
| Tour Expend[10] | 11.089 | 23.58 | 0 | 93.768 |
| Unemployment | 7.11 | 3.735 | 1.3 | 16.9 |
| Voice and Accountability | 0.196 | 0.486 | -0.577 | 1.167 |

### 4.5 Problems Encountered With Data

Finding data on economic indicators that was reported consistently enough to be used in regressions proved to be a challenge for this paper. Originally, I had desired to measure more specific economic indicators against the imports of small arms in order to draw more specific conclusions on the economic impacts of small arms imports. Infrastructure and Investment variables such as the export of ICT goods, container port traffic, and private investment in specific sectors such as energy and telecoms were desired, but data for those indicators in Central America was scant. Ultimately it was determined that GDP growth and growth of tourism expenditures were sufficient in measuring some extent of economic growth, although they have their weaknesses—mainly that they are two large of measures to be impacted by the import of small arms, especially GDP growth.

[9] Per 100,000 of the population
[10] Per 100 million of the population

Other data which was sought but underreported in Central America were data on displaced persons due to conflict. This variable would have been a beneficial addition to measuring the extent of conflict and could have been used in all models. An indicator of wealth inequality, such as the GINI coefficient would have been a good supplemental independent variable for all of the models, and could potentially have been used as a dependent variable in its own separate model. However, the GINI coefficient and other indicators of wealth inequality are severely underreported in the World Bank's Databank for Central America. For Model 2 (Corruption), numerous indicators on social equity provided by the World Bank were desired, but very seldom reported for Central America. Specifically variables such as the gender equality ratio, policies for social inclusion/equity cluster average, property rights and rule-based governing rating, and the social protection rating would have made good control variables in Model 2 as these factors are cited in Treisman (2000) as leading to corruption.

This paper conducts its analysis on only the legal trade of SALW. One reason for this is that the "Illegal trade" of SALW can be a confusing term. In its clearest sense, it is an arms trade where both parties are operating in the black market. However confusion arises when one party is trading legally, and the other is trading illegally, which happens frequently as different countries have different characteristics for illegal arms. It can also cause confusion when an arms order passes through more countries than just the seller and recipient party, which happens frequently. Going forward, an internationally recognized definition of illegal trade should be agreed upon whereby all countries can gain a clearer knowledge of what is legal and what is illegal.

Additionally, by examining solely the legal trade this paper also hopes to emphasize that negative consequences of arms transfers can occur even through legal channels. Despite that the

majority of policy initiatives to combat SALW proliferation focus on weakening the black market, it's important to realize that legally traded weapons are often at the forefront of crime and conflict, and the vast majority of illegal small arms were manufactured in accordance with the law. Therefore, a full understanding of the legal trade is just as necessary to stop the violence in developing nations that is linked to the SALW trade. If the hypotheses of this paper are verified, it will help governments realize that many times it is the legal trade that is to blame for the misuse of SALW, and that they need to examine their own behavior when as it pertains to small arms trade to developing countries instead of looking outward and blaming criminals.

The World Bank discourages using the WGI to make strong cross country and year-to-year comparisons as each yearly figure is accompanied by standard errors. The standard errors are a result of the number of sources of data available for a country, and the extent to which these sources agree with each other. Their use indicates the reality that governance is difficult to measuring using any kind of data. The use of these standard errors is a step up from other measurements of data where they are left implicit or ignored altogether. Despite caution against interpreting the figures from year-to-year or across years; they are more accurate to interpret over longer periods of time, such as a decade, when the standard error is less likely to make a difference in the interpretation.

## Section 5: Results

Table 4 shows the results of all four models. I find that arms imports per capita (lagged one year) is not statistically significant in any of the four models, that is arms imports per capita does not lead to reduced economic growth by increasing stability or corruption, or decreasing GDP growth or tourism expenditures.

**Table 4—Regression Results on Imports per Capita (lagged one year)**

*P-values and lags in parenthesis*

| Variable: | Stability | Corruption | GDP Growth | Tourism Expenditures |
|---|---|---|---|---|
| Imports per capita (1 year) | 0.112 | -0.136 | -0.091 | -5.429 |
| | (0.621) | (0.533) | (0.238) | (0.231) |
| Armed forces | 0.006 | | | |
| | (0.971) | | | |
| Agriculture | -0.018 | | -0.004 | |
| | (0.468) | | (0.548) | |
| Corrupt | -0.164 | | -0.022 | |
| | (0.361) | | (0.673) | |
| Democracy | | -0.143 | | -12.397 |
| | | (0.282) | | (0) |
| Education | | 0.011 | -0.002 | -1.310 |
| | | (0.156) | (0.638) | (0) |
| Energy | 0 | | 0.000 | 0.020 |
| | (0.834) | | (0.633) | (0) |
| Female Parliament | | 0.001 | | |
| | | (0.869) | | |
| FDI (1 year) | | | -0.001 | |
| | | | (0.780) | |
| GDP growth | 0.352 | -0.206 | | |
| | (0.54) | (0.666) | | |
| Govt Effective | | 0.606 | | |
| | | (0.007) | | |
| Industry | -0.004 | 0.003 | 0.007 | 0.030 |
| | (0.535) | (0.663) | (0) | (0.773) |
| Intentional Homicides[11] | -0.003 | 0.001 | 0.000 | 0.023 |
| | (0.374) | (0.763) | (0.664) | (0.74) |
| Life Expectancy | 0.197 | | 0.006 | 10.991 |
| | (0.019) | | (0.888) | (0) |
| Population | | | 0.000 | |
| | | | (0.401) | |
| Rule of Law | 0.007 | 0.423 | -0.053 | |
| | (0.981) | (0.061) | (0.518) | |
| Stability | | -0.008 | -0.018 | -6.162 |
| | | (0.954) | (0.72) | (0.051) |
| Tour Expend[12] | -0.007 | | 0.003 | |

[11] Per 100,000 of the population

[12] Per 100 million of the population

| | | | | |
|---|---|---|---|---|
| | (0.236) | | (0.258) | |
| Unemployment | 0.002 | -0.003 | -0.002 | |
| | (0.931) | (0.826) | (0.784) | |
| Voice and Accountability | 0.403 | | -0.050 | |
| | (0.094) | | (0.491) | |
| Year | -0.056 | -0.001 | -0.003 | -1.357 |
| | (0.009) | (0.908) | (0.716) | (0) |
| Belize | 0.073 | 0.077 | -0.379 | -44.421 |
| | (0.926) | (0.737) | (0.668) | (0) |
| Costa Rica | -0.264 | 0.342 | -0.354 | -91.741 |
| | (0.716) | (0.277) | (0.674) | (0) |
| El Salvador | 0.993 | 0.150 | -0.423 | -8.746 |
| | (0.19) | (0.554) | (0.584) | (0.046) |
| Guatemala | 0.911 | 0.448 | -0.384 | 16.619 |
| | (0.246) | (0.108) | (0.610) | (0) |
| Honduras | 0.785 | 0.166 | -0.414 | |
| | (0.269) | (0.536) | (0.603) | |
| Nicaragua | 0.959 | 0.447 | -0.402 | -4.583 |
| | (0.184) | (0.119) | (0.622) | (0.116) |
| Panama | -0.207 | -0.124 | -0.407 | -59.549 |
| | (0.754) | (0.473) | (0.628) | (0) |
| Constant | 99.072 | 1.284 | 6.690 | 2100.021 |
| | (0.0096) | (0.953) | (0.665) | (0) |
| Observations | 64 | 59 | 63 | 73 |
| R-squared | 0.92023 | 0.928 | 0.556 | 0.987 |

The only variables of significance in Model 1 are life expectancy and year; indicating that political stability leads to increased life expectancy, and that much of the trends in the political stability indicator for Central America from 1995-2011 are due to chronological events. Government effectiveness is the only variable found to be significant in Model 2. The positive coefficient here is not surprising since countries with more well-run government institutions are expected to experience less corruption. Model 3 finds only "Industry" to be statistically significant. The positive coefficient and strong significance were expected since it is a broad variable that is directly related to economic growth. Lastly, Model 4 finds variables such as

democracy, education, life expectancy, year, Costa Rica, Guatemala, and Panama to affect tourism expenditures; however, arms imports have no effect.

## Section 6: Conclusion

It is possible that the inclusiveness of these models is due to the region already being awash with SALW. If the region had indeed been over-supplied with SALW up until 1995, as many security scholars speculate, then perhaps no additional negative affects result from inflows of additional weapons. If this project were to be expanded to include a better dataset and more carefully selected variables then perhaps we would see superior, and possibly significant—results. Additionally, to test for the "over-supply" hypothesis, data on the current stock of weapons could be obtained, inputted in the above models, and then compared to the arms imports variable. However, as the models currently stand there is no significant impact of small arms transfers to Central America and Mexico on economic development in the decades following the cessation of civil wars that plagued the region from the late 1970's to the early 1990's.

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## Appendix 1 Full Variable Definition and Sources:

| Variable | Full Definition | Measurement | Source |
|---|---|---|---|
| Agriculture | Agriculture value added to GDP | % of GDP | World Bank Databank |
| Armed forces | Armed forces personnel in country | % of total labor force | World Bank Databank |
| Corrupt | Control of Corruption | Scale (-2.5, 2.5) | World Bank WGI |
| Education | Total enrollment in education | % of population of official primary education age | World Bank Databank |
| Energy | Use of primary energy before transformation to other end-use fuels | kg of oil equivalent per capita | World Bank Databank |
| Female Parliament | Number of women in national parliament | Persons | World Bank Databank |
| FDI lag (1 year) | Foreign Direct Investment | Constant 2005 US$ | World Bank Databank |
| GDP growth | Annual growth of gross domestic product | % (GDP figures are in constant 2005 US$) | World Bank Databank |
| Govt Effective | Perceptions of quality of public service | Scale (-2.5, 2.5) | World Bank WGI |
| Imports per capita lag (1 year) | Imports of small arms per capita | Constant 2005 US$ | U.N. Comtrade |
| Intentional Homicides | Estimates of unlawful homicides purposely inflicted | Per 100,000 of the population | World Bank Databank |
| Industry | Industry value added to GDP | % of GDP | World Bank Databank |
| Life Expectancy | Number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life | Years | World Bank Databank |

| | | | |
|---|---|---|---|
| Population | Number of persons living in country | Persons | World Bank Databank |
| Rule of Law | Perceptions of the extent to which agents have confidence in and abide by the rules of society | Scale (-2.5, 2.5) | World Bank WGI |
| Stability | Perceptions of the likelihood that the government will be overthrown by violent means | Scale (-2.5, 2.5) | World Bank WGI |
| Tour Expend | Annual revenue from tourism expenditures | Per 100 million of the population (Constant 2005 US$) | World Bank Databank |
| Unemployment | Share of the labor force that is without work but available for and seeking employment | % of total labor force | World Bank Databank |
| Voice and Accountability | Perceptions of freedom of election, association, media, and expression in a country | Scale (-2.5, 2.5) | World Bank WGI |